

**Territory Occupancy and Population Arrangement.** Approximately 40 territories were not affiliated with PRUs in 2002. Most of these territories occurred in the suburbs of Port, St. John, Palm Bay, and Sebastian Highlands.

Most territories on Carson Platt and Coracii sections of Sebastian Buffer Reserve were not counted in 1992. We believe this underestimate involved 36 territories. We suspect that population sizes were also underestimated along the Ten Mile Ridge south of Fellsmere Road. Underestimations occurred because the search image emphasized xeric scrub and access to some ranches was limited.

If we assumed that population sizes in 1992 were at least as great as Coracii and Carson Platt in 1992, the total 1992 population size would have been 407 pairs. Only the Central Brevard metapopulation did not decline since 1992 and no metapopulation approached its potential population size (Tables 5, 6, Figure 15), based on the habitat mapping results described in previous sections. The greatest difference between 2002 population size and potential population size occurred in the North Brevard metapopulation. Possible metapopulation structures suggested that the populations along the mainland of the central Forest Atlantic coast could be organized into 1-3 metapopulations (Table 5, Figure 7a).

If one excludes areas poorly surveyed in either 1992 or 2001 (Fox Lake, Coracii, Carson Platt, and Ten Mile Ridge South of C54 Canal), the decline for all metapopulations was 34% between 2001 and 1992. The estimated average annual growth rate was calculated as  $231/351^{(1/10)} = 0.96$ , which was an average population decline of 4% per year.

Table 5. Metapopulation Summary of Population Sizes.

Metapopulation	Breeding Pairs		
	1992	2002	Potential <sup>a</sup>
North Brevard	102	67	324
Central Brevard	50	59	104
South Brevard-Indian River-St Lucie	255	160	410
Combined	407	286	838

<sup>a</sup> Includes unoccupied PRUs that could be restored to enhance connectivity.

<sup>b</sup> Assumes that 1992 population sizes for Fox Lake, Carson Platt, and Coracii were at least as great as in 2002. Neither of these areas was surveyed in 1992.

**Figure 15. Potential Population and Actual Population Sizes (2002) of Territory Clusters. The y-axis represents the number of territories. Data Arranged from North-to-South except for the Unoccupied PRUs.**

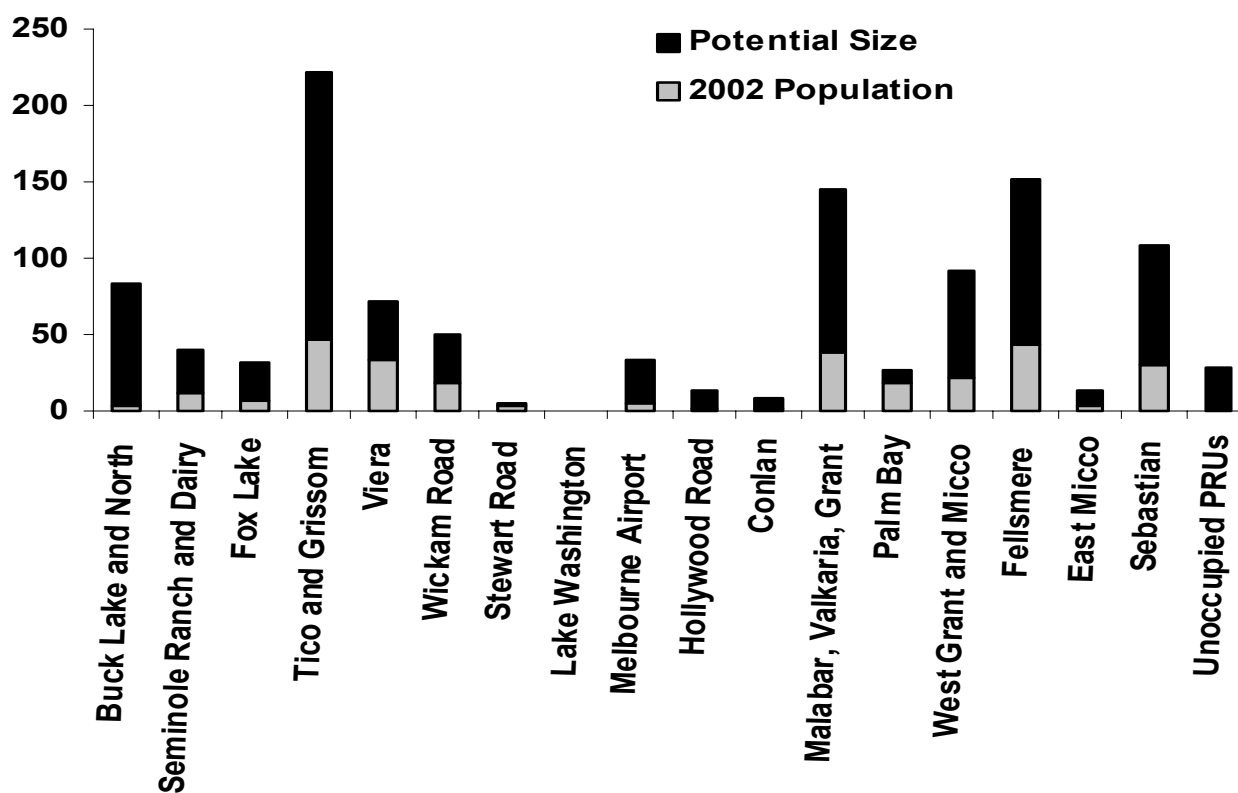


Table 6. Population Estimates Within Territory Clusters.

Metapopulation	Territory Cluster	Breeding Pairs	
		1992	2002
North Brevard	Buck Lake and North	11	3
North Brevard	Seminole Ranch and Dairy	11	11
North Brevard	Fox Lake	8	6 <sup>a</sup>
North Brevard	Tico and Grissom	72	47
North Brevard	Total	102	67
Central Brevard	Viera	26	33
Central Brevard	Wickam Road	13	18
Central Brevard	Stewart Road	3	3
Central Brevard	Lake Washington	1	0
Central Brevard	Melbourne Airport	7	5
Central Brevard	Total	50	59
South Brevard-Indian River-St. Lucie	Hollywood Road	1	2
South Brevard-Indian River-St. Lucie	Conlan	5	2
South Brevard-Indian River-St. Lucie	Malabar, Valkaria, Grant	59	39
South Brevard-Indian River-St. Lucie	Palm Bay	53	19
South Brevard-Indian River-St. Lucie	West Grant and Micco	36	22 <sup>b</sup>
South Brevard-Indian River-St. Lucie	Fellsmere	42 <sup>c</sup>	43 <sup>d</sup>
South Brevard-Indian River-St. Lucie	East Micco	7	3
South Brevard-Indian River-St. Lucie	Sebastian	52 <sup>e</sup>	30
South Brevard-Indian River-St. Lucie	Totals <sup>f</sup>	255	160

<sup>a</sup> Areas with 5 pairs in 1992 were not surveyed in 2002. Estimates assume 5 pairs were present in 2002.

<sup>b</sup> Areas with 11 pairs in 1992 were not surveyed in 2002. Estimates assume 11 pairs were present in 2002.

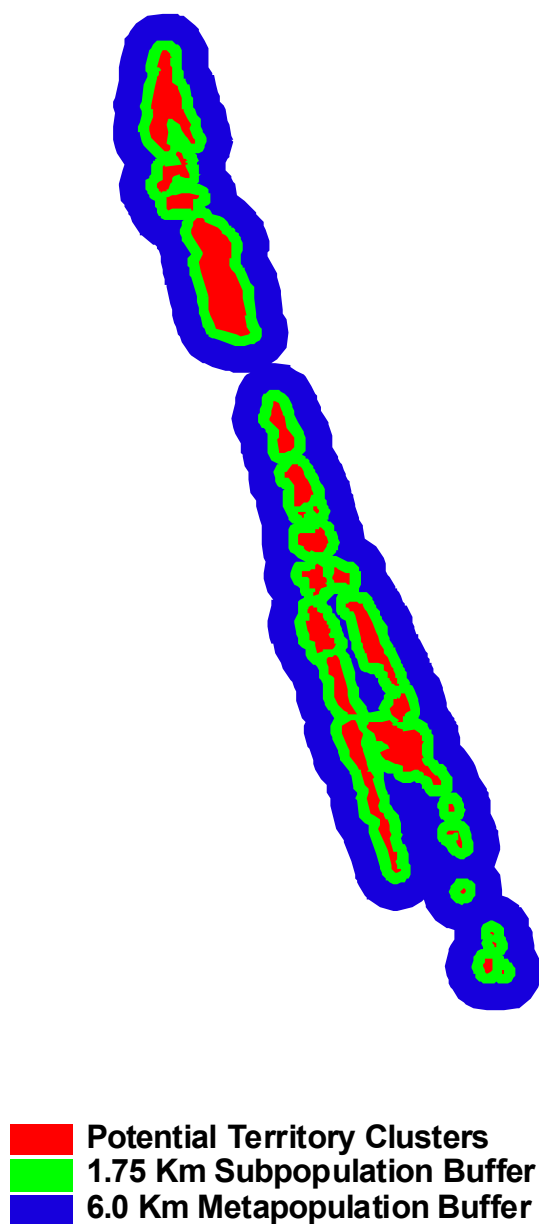
<sup>c</sup> Areas with 27 pairs in 2002 were not surveyed in 1992. Estimates assume these were present in 1992.

<sup>d</sup> Areas with 12 pairs in 1992 were not surveyed in 2002. Estimates assume these were present in 2002.

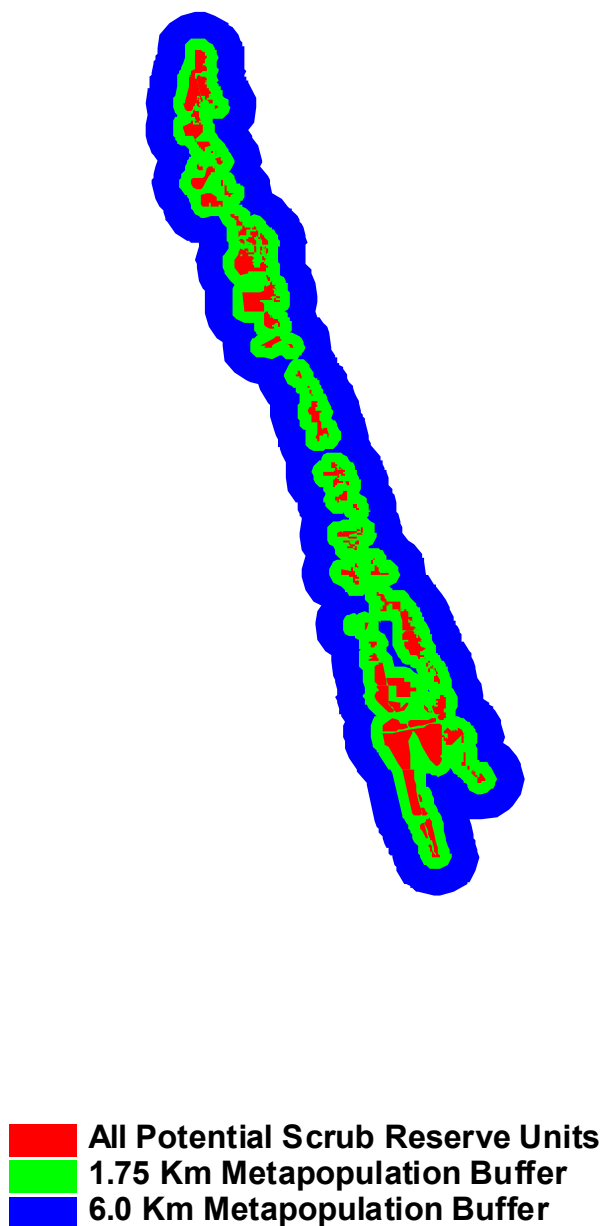
<sup>e</sup> Areas with 9 pairs in 2002 were not surveyed in 1992. Estimates assume these were present in 1992.

<sup>f</sup> Excludes areas south of Sebastian and Fellsmere that had 21 pairs in 1992.

**Figure 16a. Population structure using the buffer model described by Stith (1996) to define subpopulations and metapopulations but applying the buffers to potential territory clusters instead of estimated territory locations. This probably best represents current population structure: a North Brevard and a Central & South Brevard-Indian River-St. Lucie metapopulation.**



**Figure 16b. Population structure using the buffer model described by Stith (1996) to define subpopulations and metapopulations but applying the buffers to all Potential Reserve Units and assuming that populations within them are recovered and all habitat becomes occupied. This scenario is based on habitat potential and suggests that one option could be to manage the metapopulations as one.**



**Figure 16c. Population structure using only a subset of Potential Reserve Units (PRUs). This assumes that populations in the smallest PRUs become extirpated and that all habitat is destroyed in PRUs that have no habitat currently acquired for conservation. This is a likely scenario if no new conservation acquisitions are planned. The result is that the 3 metapopulations become distinct and many subpopulations become widely separated.**

